




# Unity Application Generator

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## Lafarge rapidly expands use of UAG to ensure deployment of its “best practices”

### Three successful projects demonstrate the benefits of UAG

#### Summary

<b>Customer</b>	Lafarge - Asia/Pacific Region
<b>Application</b>	New cement plants and upgrade/expansion of existing plants
<b>Solution</b>	Multi-project deployment of the Lafarge corporate automation standards using Unity Application Generator (UAG)
<b>Benefits</b>	Reliable project execution via re-use of proven process methodology Multiple parallel projects administrated from a central team Ability to use local third-party resources and still get consistent results.

#### Application



Lafarge Cement manufacturing facility

Lafarge is the world leader in building materials, with top-ranking positions in each of its four businesses: n°1 in Cement and Roofing, n°2 in Aggregates & Concrete, and n°3 in Gypsum. With 80,000 employees and 2,100 production sites, they are present in 76 countries. In Asia alone, Lafarge has 34 production sites just for Cement! Established in 1833, today Lafarge Group has sales of €16 billion (2005) and is listed on the Paris and New York stock exchanges.

When Lafarge needed to implement three new projects in parallel between the end of 2005 and 2006, Lafarge expanded its use of UAG to reliably deploy their best practices via the re-use of Lafarge's existing UAG based library for cement plants.

Lafarge used UAG for a new line in a cement plant in China, an enhancement of an existing plant in Vietnam, and a refurbishing of a plant in Indonesia which was damaged by the Tsunami in 2004. Lafarge had used UAG in two other projects in China already gaining experience with the UAG tool on each one.

The project in China covered the complete process with raw mill, cement mill, kiln and packaging. The enhancement in Vietnam included the cement mill and the packaging area. In Indonesia, the first step of the refurbishment was in the packaging area (using cement shipped in). Further refurbishing is planned.

#### Benefits

Lafarge is a classic reference customer for UAG - getting the benefits of faster project schedules, reduced project cost and risk, and the ability to capture and re-use best practices. Lafarge's key objectives were achieved in these projects:

##### Ensuring deployment of corporate standards

Reliable implementation of their production methodology whether in a new plant or in the expansion or refurbishment of an existing facility.

##### On-time delivery with diverse local implementation teams

Deliver the expected capacity on time and on schedule while using economic local implementers. Lafarge implemented three difference projects in three countries with different implementers in a short space of time, yet they achieved their objective of reliable, consistent project outcomes.

##### Sustainable productivity

Ensure productivity will be sustained and maintenance can be achieved locally



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after the contractors have finished and left the site.

In 2007 new projects included the start of a New plant in India with at least 10 PLCs and also the continued refurbishment of the Indonesian plant. Another plant was also installed in Cameroon using UAG, this time with a French System Integrator.

In addition, Lafarge is planning a new plant in the United States. Training on the UAG library and methodology for the North American technical centre has already taken place as Lafarge seeks to replicate the UAG success from Asia to its other regional operations.

## Solution



*Typical operator HMI  
screen in the Lafarge  
application*

## Design and Implementation

UAG is an advanced design and generation software tool that integrates multiple PLCs and HMI/SCADA systems to provide an automation solution. Using an approach based upon reusable objects (Application Libraries) and automatic application generation, UAG ensures consistent design and implementation of user-defined standards & specifications. Providing change tracking and automatic documentation, UAG supports implementation of standards including ISA-88 and GAMP.

All systems were equipped with Schneider Electric's Modicon Quantum PLC and use the iFIX SCADA system. They take advantage of a small and simple, yet very efficient UAG library, which covers Lafarge's manufacturing philosophy prescribed in their company standards. The library contains functions for all basic devices of the process and focuses clearly on populating PLC programs and the SCADA application, and also provides an easy set up of the communication between both.

As the library was already proven in earlier Lafarge projects, these three projects took the advantage of re-using a proven concept, which made the usage of UAG even faster, easier and more efficient. This is also reflected by the fact that the projects were executed by different teams. Whereas China was done by Schneider's core team for Lafarge in China, the Vietnam project was executed by a local System Integrator and Indonesia was done by Schneider's execution center in India.

## Services and Support

To ensure total success, the projects and running plants are supported by Schneider Electric China, whose expertise in UAG and Lafarge's cement standard U21, can be relied upon when required. They were initially educated during the first project with the help of Schneider Electric France.

## Project Details

China: 7 PLCs - 3000 I/O-signals  
Vietnam: 3 PLCs - 1300 I/O-signals  
Indonesia: 1 PLCs - 500 I/O-signals.

## Information

Hussain Ahmed  
UAG Business & Sales Support  
Automation Business Unit  
Schneider Electric  
Phone: +49 61 82 81 23 91  
eMail: <mailto:Hussain.Ahmed@de.schneider-electric.com>